XX.—*Journal of Two Expeditions to the West Coast of the Middle Island of New Zealand in the Year* 1859. By JOHN ROCHFORT, Esq., of Nelson, Surveyor.

Communicated by Sir W. C. TREVELYAN, Bart., F.R.G.S., &c.

FIRST EXPEDITION.

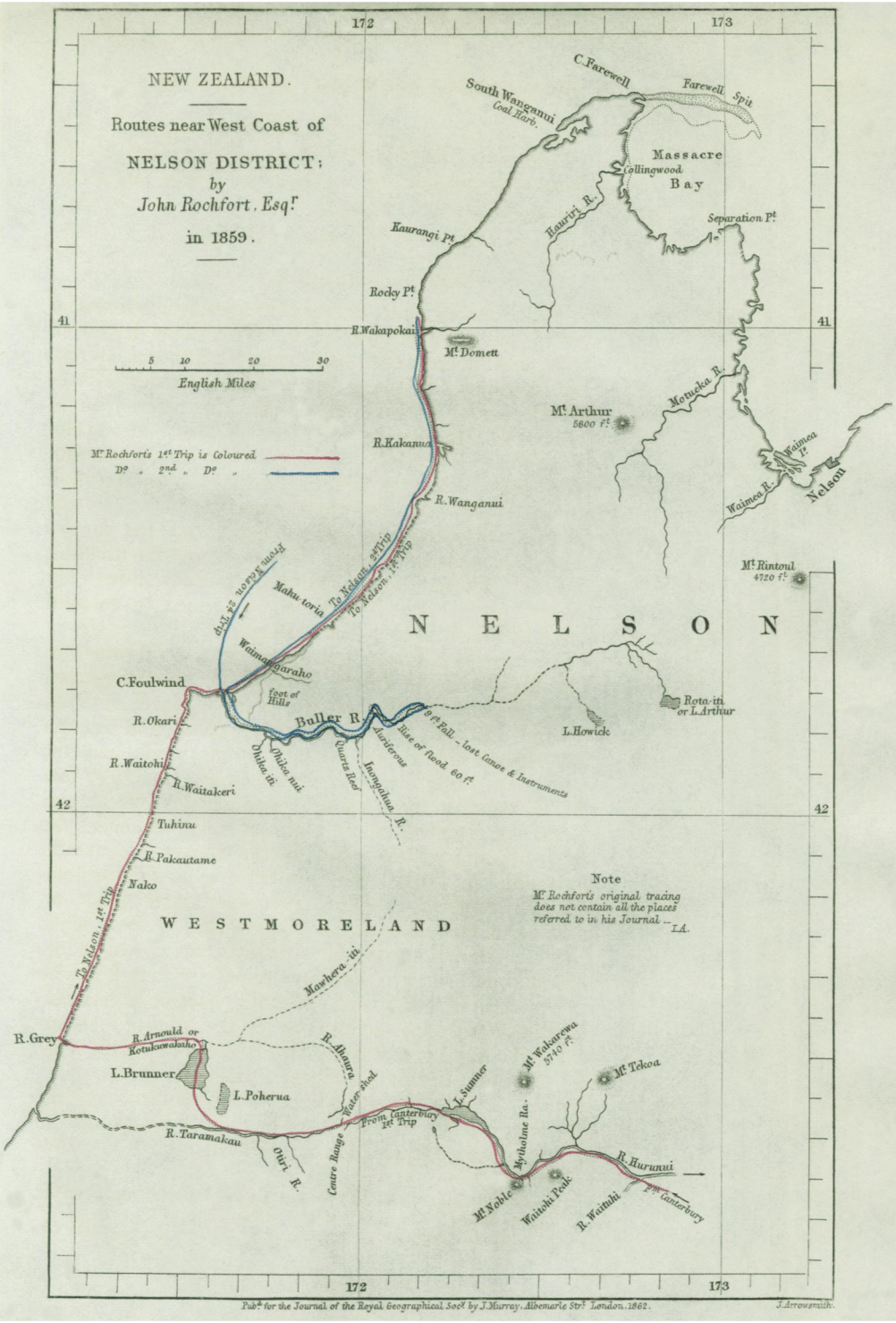
IN accordance with arrangements entered into with the Provincial Government of Nelson for the survey of the West Coast district of that province, I started in the month of February, 1859, and, accompanied by three European assistants, proceeded in a small sailing-vessel to Port Cooper. Arrived there, my first object was to secure the services of Maories, to act as guides and assist in the operations of surveying, carrying provisions, &c.; but I was not able to induce a single native to join me, owing to their objection to explore country not then purchased from their race by the Government, and also because they did not like to face the danger to be encountered in passing through the snow on the dividing ranges. I therefore determined to start on the journey, aided only by three assistants (or "hands," as they are termed in colonial phrase) that had accompanied me from Nelson.

We proceeded first to Kaiapoi, and thence by a bridle-track to the stations of Mason and Taylor. This district is intersected with lakes, and in the middle of March we passed between Lake Taylor and Lake Katrine. Following along the margin of the latter (almost impassable through swamp), we had the difficult operation of ascending, with a pack-horse, some 500 feet of precipitous incline, in order to overcome an obstacle in our road; and then we reached the margin of Lake Sumner, the course of which leads into the valley of the Upper Hurunui, a valley some 15 miles in length, and consisting of a wide shingle-bed, studded with numerous well-grassed islands and flats, and forming the base of a range which is clothed with a forest of black birch. As we ascended towards the saddle of the Hurunui, we found that the river-bed became very contracted and rough; there were no further signs of grass, and travelling became almost impossible. At last, however, by scrambling up the sides of a waterfall, we reached the saddle, and found it to be covered with nené and the short rushes invariably discovered at the snow-line.

Whilst in this part I explored a hill to the northward, and discovered the source of the Tutai-kuri, which is a branch of the Ahaura running into the Grey.* On this hill I experienced one of

* The rivers Buller and Grey were explored some years back by Mr. Brunner, and an account was published in the 28th volume of this Journal.

Mr. Rochfort promises the details of another survey, which he was about to undertake.—ED.



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those atmospheric effects only seen to perfection at great altitudes, when, in a terrific storm, the clouds meet and rebound, the ceaseless peals of thunder become almost deafening, and the hail pelts down pitilessly on the exposed traveller. The hill was enveloped in a dense fog, which continued until daylight, when the rising of the sun presented a glorious contrast to the terrors of the night.

While at this elevation we suffered most cruelly from the attacks of innumerable rats; but, strange to say, although our canvas tents, clothes, and flour-bags, and other articles were greedily devoured, the rats would not touch the flour.

Crossing the saddle of the Hurunui, which is about a mile wide, we began the western river descent. For a short distance we travelled easily down the bed of the river, but we soon found it impracticable, owing to the precipitous falls over which the river cascades. We therefore crossed a spur on the north side, and going down a small creek we came to the river Taramakau, the course of which we followed for 3 miles through a gorge, scrambling over the rocks and wading through the water with much difficulty, as we had to carry our supplies, which then weighed over 1200 lbs. Birds are very scarce in this part.

Still following the course of the river, we found that about 14 miles below the saddle the water is augmented to a great extent, by receiving the contents of another river from the south (called by the natives Otira), and rendering the Taramakau difficult if not dangerous to ford. Much fine timber exists in this part of the country, and covers extensive flats which are available for agriculture.

While camped on this spot an accident occurred which greatly delayed my expedition and taxed our patience to the utmost, as we were then pushing on to unexplored and interesting land. One of my men accidentally shot himself in the arm, and it therefore became necessary for us to retrace our steps with him, and secure for the patient that quiet and assistance not to be had in my own camp. Leaving our tent, &c., to the care of the elements, we wended our way over the inhospitable region of snow, mountains, floods, and cataracts, to Taylor's station, where we left the wounded man. Here we met with Mr. Mackay and his brother, just arrived from the Haikoras, and, on my undertaking to be their guide, they agreed to accompany me to my former camp.

The weather now had changed, and we were detained by snow-storms for eight days at the Lake station; and on recrossing the dividing range we had to contend with snow breast-high and a four days' flood in the Upper Hurunui, which, as we had to carry fresh supplies of provisions, made this portion of our journey most trying. We, however, found a severer task awaiting us at the spur (previously alluded to), where, owing to the great depth of

snow, we had to tax every nerve to liberate ourselves. So arduous was the labour, that we had to take turns in going first, and occasionally one would sink half-buried between the yielding masses of snow, and would have to be extricated by the rest; at other times the leader, dislodging a large drift, would almost cover those in the rear.

After thus travelling for eight days, a walk of two more brought us to the scene of the accident, where I found that my stores had become all mouldy, and my tent was split to ribbons.

Here the Maories that had been engaged by the Messrs. Mackay came up, and proceeded on with those gentlemen towards the West Coast.

After repairing my tent I recommenced surveying. The river from this point, and 9 miles below, is a wide shingle-bed, covering the entire valley, and being divided by channels into numerous islands, covered with broom, tutu, koromika, akiaki, and patches of grass.

At the end of this the hills on the north side terminate suddenly, and form an opening of about 2 miles in width. Here much is to be observed. Looking from the Taramakau N.N.E., you see an isolated hill, called by the natives Kimonga, between which and the snowy ranges is a wide flat and an open pass to the Pohirua Lake, as far as the Ahaura River. The pass consists of open fern and flax, with patches of bush. Indeed, the hills may be said to end here, and that immense flat commences which claims the Buller as its northern boundary.

The rocks on the sides of the Taramakau are composed of argillaceous slate on one side and quartz on the other, giving favourable indications of gold.

Looking from the same place south-west by south, you see Mount Turiwhité, which appears to divide the valley of Taramakau: one pass running through to the Brunner or Kotukuwakaho, and the other carrying the water of the Taramakau to the ocean. The view from this point is beautiful in the extreme.

According to my instructions, I now left the Taramakau, and, cutting a line three-quarters of a mile long through a belt of white pine-bush, emerged on an open plain, very stony, and covered with high fern and flax. From this plain were two passes: the north-east one running between the isolated hill Kimonga and the main range, over the Poherua Lake, and crossing the Ahaura and other rivers to the Buller. The view in this direction presents a level plain, unbroken by a single hill. To the north-west (the route I followed), through the Kotukuwakaho Pass, to within 3 miles of the lake of that name, was all a stony fern flat. The margin of the lake is covered with white pine-bush, extending to the hills on either side; through this bush I cut a line 3 miles in

length. On reaching the lake we discovered the sides to be so steep as to prevent travelling, and it became necessary to build a canoe to continue our course. This was accomplished, with a week's labour, by hollowing out a white pine-tree; and in this frail bark we succeeded, after some fruitless attempts made in too rough weather, in reaching the opposite side of the lake. The roar of the ocean was quite audible from this place.

The rocks at the north-east corner of the lake are granite, which joins the slate from the direction I travelled, and this is another favourable indication of gold. In looking across this lake you perceive a flat bush-country, the lower gorge of the Grey, or end of the Paparoha range; and at the northern corner of this lake there is an open patch of fern and flax, and a river that connects this with the Poherua Lake. A small river at the south-west corner runs from the lake to the sea (and has been used by the natives as a track to Port Cooper); and at the north-west the end of the lake is formed by the Kotukuwakaho, which discharges itself into the Grey. The lake is 6 miles long, by 5 wide. It encloses an interesting island, whereon stand the remains of an ancient pah, called Taka Taka. The waters of the lake have been subjected to such violent tempests that the large war-canoes formerly brought into it were often wrecked. I noticed growing on the shores of the lake a stunted tree, bearing very much the appearance of mahogany, and with a long, thin, glazed leaf. The birds found in this part of the country are paradise, grey and blue ducks, teal, the crested grebe, rail, white cranes, and sea-gulls, with an abundance of quail and woodhen on the plains.

My survey of the Kotukuwakaho, or Arnould River, was accompanied with much difficulty and risk.

The Arnould, at its source, is a wide river, taking the overflow of Lake Brunner, and for 2 miles, through a dense forest of pine and birch, has little current and no fall; but when joined by two streams from the north, falls follow each other in rapid succession, the current increases with such velocity that it becomes a race, and the snags are found so plentiful, even in the deepest water, as to leave no available channel whatever. I had many familiar proofs of the danger of the navigation, and often was our canoe in imminent danger of being capsized, and I had to rig canvas top-sides to prevent the water from swamping her. During several weeks past we had been on short allowance, and to lose our little stock of flour would have been utter ruin. Heavy rain fell incessantly, making the canoe sink deeper; the falls became more rapid and dangerous, so that it was a great task to steer her, and our only chance lay in keeping her head with the current. Trying to do this, the canoe struck a snag, sheered off, passed down a fall with the

utmost rapidity, then turning a sharp elbow in the river, we discovered to our dismay a tree projecting 50 feet across the river and about 2 feet above the water. The crisis was imminent, as we were running at least 10 knots an hour; but I ordered the men to lie down, and we luckily shot under this barrier without accident, although the dog had nearly lost his head from not understanding the word of command. We now sailed on merrily, but in another quarter of a mile danger again threatened us in the shape of a dead block of snags which impeded the river. Our only chance was to carry on all sail, trusting to the current to drag us across; but our calculations were erroneous, and the canoe, having run one-third of her length out of the water, stuck fast. We were therefore obliged to abandon our gallant craft; and so, securing the instruments, papers, and the remaining small stock of flour, we commenced our dreary march in the midst of a drenching rain, which continued through the day and night, and completely soaked us. We suffered other inconveniences besides those of wet and cold, for our larder boasted no greater delicacy than thin paste made of a tablespoonful of flour boiled in a quart of water. This we had twice a day while the flour lasted. In our exhausted condition we were enabled to accomplish but a short distance each day, and our small stock of flour soon vanished. One day we would have nothing to eat; another day only a small robin between three of us and the dog; and a chance pigeon or two on another day; until at length we reached the Maori pah. Here every civility and kindness awaited us; and though only potatoes were procurable, they were sufficient not merely to support life, but to stimulate appetites which for six long months had submitted to worse than English pauper's fare.

While with the Maories, I learned of the existence of the Ngatimamoi tribe, or wild men of the bush. About two years previously a woman of this tribe had been captured by the Maories, but she soon afterwards escaped, and so little information was obtained from her.

I will now briefly enumerate a few of the advantages possessed by this West Coast district, which I have taken the liberty of naming Westmoreland.

The River Grey—having a considerable depth of water over its bar at low tide, 9 feet rise of tide, and deep water for several miles up the river—runs through the most extensive district of land in the province of Nelson available for agriculture. At the entrance of the river are two deep-water lagoons, conveniently situated, sheltered from all winds, and offering secure anchorage in the case of freshes, which are heavy during the rains. There is land admirably adapted for a town of considerable importance, and having at its other extremity the River Buller, which is of

much greater capacity than the Grey, possesses a finer harbour, and is free from the heavy swell which must always affect an exposed entrance. There is also, under Cape Foulwind, a sheltered anchorage from southerly winds, formed by a reef of rocks stretching out parallel to the coast. Seals, whales, and such other sources of wealth, abound in the vicinity.

The climate is extremely salubrious, and is, in my opinion, equal to that of Nelson. There is a good seam of coal visible. Potera logs of stupendous size strew the beach for miles, and vast tracts of red and white pine, totara, rata, and other timber but await the woodman's axe. Eels of great size abound in all the rivers, and birds of the parrot and apteryx kind are found in various parts of the country. A riwi (one of the latter genus, about the size of a turkey, and having spurs on his feet) will, when attacked by a dog, defend himself so well as frequently to come off victorious.

But the great desideratum is the discovery of a practicable line for the construction of a north road by which Nelson could be readily reached overland; and, from the opportunities I had of judging, I believe this will yet be found. The country will then be speedily opened up for settlement.

After recruiting our exhausted strength we left the hospitable Maories, and, travelling along the coast, we reached our homes about the end of July.

Second Expedition.

On this occasion I proceeded to the West Coast by sea, and towards the end of August, 1859, I left Nelson in the cutter *Supply*, and reached the mouth of the river Buller after a protracted passage of fourteen days.

My original intention was to land part of my stores at the Buller and part at the Grey; but as it was very changeable weather, I deemed it prudent to land them all at the Buller. My intention now was to survey up the Buller, and carry the whole of my stores by canoe to a considerable distance up the Inongahua (a tributary of the Buller, capable of canoe-navigation) to where a low birch-range, about 3 miles across, divides it from the Mawhera-iti, a tributary of the Grey, whence I should be in a position to finish the survey of the Grey, besides having the benefit of a canoe to carry my stores nearly all the way. But I could not commence my survey until the return of a messenger whom I had sent to the Grey for extra hands, and he did not make his appearance for six weeks. This interval I employed in surveying the coast in the neighbourhood of the Buller.

I found the coast to the north of the river, for about 10 miles, to be a flat alluvium, deposited at successive periods by the river,

and extending to the foot of the hills, which are distant about 2 or 3 miles. These hills are composed of quartz and felspar (in some places containing mica), approaching to a coarse granite; and at the summit of the highest which I ascended (Papahaua, 2400 feet) several strata of fine slate crop out. Owing to the fog which enveloped the top of the hill, I could get no view inland, even after waiting for two days: and this fog will, I imagine, add greatly to the difficulties of a trigonometrical or topographical survey of the country. Towards the coast this flat is bounded by a belt of bush and scrub three-quarters of a mile wide; the remainder is open plain, divided by strips of bush-land. The streams which intersect the flat abound in eels, and I observed a seam of coal on the banks of the Waimangaraho. I noticed also that there are some very extensive valleys between the flat and West Wanganui, and it appears quite probable that through some of these valleys a bridle-track to Nelson might be obtained.

To the south of the Buller the coast is characterised by flat bush for about 5 miles, when the land rises into a low table of excellent soil, extending for 12 miles down the coast. Situated about a mile down the table is Cape Foulwind, the perpendicular cliffs of which, about 60 feet in height, consist of 40 feet of a slate-coloured sandstone layer of large boulders and 10 feet of gravel and soil. At the mouth of the Okari (one of the small rivers which intersect the table-land) I found large quantities of pumice-stone, which probably either came down the river or floated from Wanganui or Taranaki. In the rear of this terrace there is another plain, in some places 2 or 3 miles wide, and reaching from half a mile below the Buller to 6 or 7 miles down the coast. This plain has, at no distant period, been covered with a forest of Manuka, as the numerous stumps and dead trees abundantly testify. A series of similar plains, though of a smaller size, reach for about 20 miles down the coast, intersected by streams, in two of which —the Waitakeri and the Waitohi—I discovered seams of coal.

The long-expected natives having at last arrived from the Grey, I immediately started to survey up the river Buller. An extract from my journal will perhaps best describe this portion of my work:—

November 4th.—Surveying up the river, which is about a quarter of a mile wide, with fine level bush, interspersed with scrub on either side.

The south bank of the Buller offers advantages of no ordinary character for the formation of a town, being an accumulation of small islands and peninsulas, divided by deep-water channels available for navigation, forming a perfect Venice.

5th.—Entered the first gorge, about 4 miles from the river's mouth, which is narrow, deep, and singularly free from rapids;

the hills, clothed with small birch, rise at an angle of 80° from the horizon, and close abruptly on the water's edge.

7*th*.—Still a gorge, with hills in many places precipitously overhanging the river. Had to ascend many rapids during this day's work. The geological features are pieces of mica-slate and quartz, cemented together into a conglomerate of brown, green, and reddish colours.

8*th*.—Still working through the gorge, the slope of the hills getting more easy. Whilst chaining, I was surprised and no less gratified by one of the hands (F. Millington) announcing the discovery of gold; an event as unexpected as propitious, and one which must have a powerful influence on the future prospects of this long-neglected West land. The royal mineral was lying on the edge of the river, glistening in the sun, and in such quantity as induced rather a mutinous spirit; my hands having a greater preference for the golden prospects before them, than the sterner duties of surveying.

9*th*.—Started again. Country greatly improved; flats occurring at intervals, growing white-pine. Found gold again, and collected about 3 dwts. on the north side, lying on the surface.

10*th*.—River more open; slate still the prevailing characteristic of the district, and broken birch hills above.

11*th*.—Good pine-flats on each side of the river; the hills sandstone (similar to that used for grindstones) overlying slate, with the exception of one part, where a patch of gneiss occurs. I here had a view of a high range bearing southerly, and situated on the south side of the river, bare on the top, and apparently unbroken in outline. The river here abounds in very large eels, which are easily caught in the daytime below the rapids, where, under the shelter of a rock or snag, they await the arrival of the inonga or whitebait, myriads of which are this month in progress up the river, the rapids affording a partial barrier to their upward progress.

12*th*.—One small river flowing into the Buller from the north-westward, and two a little farther on from the south-eastward; the first having a large valley of bush with patches of fern, the two latter apparently joining at the back and forming one large wooded valley, running to the southward along the side of the range first seen yesterday. Opposite to this river, on the north side, high up on the hill, at a slip, I found a large fossil shell.

14*th*.—Thus far up the river is very fair navigation for a canoe. We had, however, to pass through a very bad granite gorge, with perpendicular rocks and cliffs on either side, surmounted by broken birch-hills.

15*th*.—Many bad falls occur in this day's work. Towards middle of day arrived at a large table-land on the north-west side

of the river, consisting of a good flat covered with bush. A conspicuous cliff, abutting on the river-bank, displayed 30 feet of clay-slate, and 10 feet composed of boulders, gravel, and soil above.

16*th*.—Delayed by heavy rain all day.

17*th*.—Entered another gorge. Strata, fine hard red granite. Midday, arrived at a rapid with a fall of 9 feet in one chain, which caused such a sea that the canoe would have been swamped had we attempted to haul her up it: added to this, the ground at the side was precipitous, and we therefore found it necessary to build a scaffolding to haul the canoe over, which caused a delay of five hours. Here the eels and inonga literally swarmed. One would think this fall would be an effectual barrier to the latter, but they had the ingenuity to climb the perpendicular faces of rocks, which were literally black with them as they scrambled over the top and dropped into the eddy above; so numerous were they, that one might take a hat and brush it full with the hand.

18*th*.—Occasional flats; slate strata still visible; found gold again on the south side of the river.

19*th*.—Very hard red granite gorge. The river in most places contracted to 50 links, and of enormous depth. I ascertained the fresh to rise upwards of 60 feet in this gorge.

21*st* and 22*nd*.—River of similar character.

23*rd*.—The same rough description as previously, the river being one continuous rapid; in many places so deep that we could neither pole the canoe on the bottom, nor scale the cliffs to haul her up with a rope, but were obliged to push her up from the projections and little cracks in the cliffs, and many times were carried round and had to work our way up again. Having proceeded a little farther, we got on shore on the granite rock, and found gold lying in the dips and cracks, carried there by the fresh.

24*th*.—This morning arrived at a bad fall, where we had to construct another scaffold and haul the canoe over. My guide here acknowledged that he could not recognise the river at all, and said he thought we were past Inongahua; but from not having seen a flat similar to what Oweka was described to me, I did not like to return. Towards the afternoon the gorge widened out to 3 or 4 chains again, and occasional flats occurred, displaying a slate country. We now appeared to have got clear of the gorges, but soon came to a very bad fall, up which it was necessary to haul the canoe; the ground at the side was almost impassable rock, but we carried some of the flour out to lighten her, and proceeded to haul her up, when in the strength of the rapid a sudden bend in the stream carried her head outwards, and the force of the current took her nearly across the river, burying her head beneath the water and dragging the rope away from us, as, from the narrow ledge on which we had to stand, we could not properly exert our

strength. Thus all the strain came on the back rope, which was also torn away, and the canoe swept down the stream with unchecked speed. We now gave chase, with the intention of swimming off to her; but, from the precipitous character of the banks, she was swept away fully six miles to our one, and was soon out of sight. Evening had now set in, and darkness quickly closed on us, which, together with the loss of all the instruments, cooking-utensils, axes, &c., made our camp most miserable, several of us being without blankets and tents, and our only consolation being that we had plenty of flour on shore. I now determined on returning next day by the side of the river, with the hopes of perhaps recovering the instruments. After three days' toilsome journeying, we discovered portions of the canoe, broken across the grain into several pieces; as also a tomahawk, which had by some chance got jammed into one of the pieces of the canoe, testifying to the tremendous force of the rapids through which she had passed.

XXI.—*On the Highland Region adjacent to the Trans-Indus Frontier of British India.* By Major James Walker, of the Bombay Engineers, &c.

Between the crest of the Soolimani range and the well-known routes from Upper Sind to Kandahar, Ghuzni, and Kabul, there lies a tract of hill country extending over 5 degrees of latitude and 2 degrees of longitude, of which little is known up to the present date. Chiefly inhabited by tribes of fanatic Mahomedans, whose hands are against every man, and every man's hands against them, these hills are peculiarly difficult of exploration. Though they have been crossed at one or two points by Europeans in disguise, they have only once been avowedly entered by British officers, on the occasion of the memorable mission of the brothers Lumsden in 1857-58 from Peshawur to Kandahar, through the valley of the Koorum, which lies on the southern skirts of the Safed Koh mountains, where it abuts at right angles against the Soolimani range.

Like the Scottish Highlanders of old, the inhabitants of these hills prefer to subsist on the wealth of their lowland neighbours rather than on their own exertions. Occasionally their raids are directed against British subjects, when it becomes necessary to despatch a force against them to exact retribution for past offences and security for future good conduct. On these occasions opportunities are presented for acquiring some knowledge of the geography of countries which are otherwise sealed to Europeans.

During the progress of the operations of the trigonometrical